

How to Pick the Right Size Generator for Your Commercial Building



While installing backup generators is integral to every commercial establishment, purchasing quality industrial generators such as the [Kohler KD3000](#) is equally critical. The advantage of installing a Kohler industrial diesel generator is that it offers excellent performance and lasts longer. Besides, [Kohler generators](#) are more affordable and reliable than most generators.

However, it is vital to get it right when choosing the right generator size for your commercial building. While a too-large generator will cost you unnecessary money, a small one will not adequately power your building.

Here is a guide to choosing the right generator size for your commercial building.

Determine Your Building Square Footage

Measuring your building's square footage is the simplest way to determine the most appropriate generator size. Usually, a generator purposed to power a retail building should supply 50kW and an additional 10W per square foot. However, commercial building power requirements differ depending on the number and types of electronic devices inside. As a result, other factors must be considered besides the building's square footage when choosing a generator size.

Assess Your Power Usage

This approach requires you to determine your monthly or annual power usage. Go through your previous electricity bills to determine your peak usage. Once you have assessed your building's power usage, you can use that information to select an appropriate generator size. You might want to add at least 25% of the total power usage when selecting a generator to give room for additional devices.

Consider Full-Load Current Measurements

Using full-load current during peak usage, you can estimate the right generator size for your commercial building. To get a correct estimation of a generator size, take the total amps used and divide it by three for a three-phased current and by two for single phased current. Multiply the resulting number by your building's supply voltage, then again by 1000 to convert it into Kilowatts.

In simpler terms, **Full load = Total amps x Supply voltage x 1000.**

However, adding at least 25% reserve kilowatts is prudent when deciding on the right generator size. It prevents the chances of inadequate power supply and provides room for additional electrical devices in the building.

Consider the Intended Application

The generator's intended application is among the vital things to consider when choosing a generator. Are you installing a backup or a prime generator? If you purchase a backup generator, you can consider your wattage requirement. In the case of a primary generator, however, you might want to add a safety margin of about 20% to 30%. This is because; a generator shouldn't be operated at its maximum capacity for a period exceeding 30 minutes. Also, considering a safety margin improves the safety of the generator and appliances in the case of additional [power needs](#) in the future.

Ambient

Another critical factor to consider when deciding on the most suitable generator size is environmental factors. Usually, non-standard weather conditions can alter a generator's power output. But how does one determine how a generator will be affected by various weather conditions?

The most appropriate technique to determine how a generator is affected by ambient conditions is derating. According to Wikipedia, derating is a technique used to determine how electrical devices operate under non-standard conditions.

While derating is significantly dependent on the generator manufacturer, a standard derating formula states that a gasoline, liquid propane, or diesel generator should be derated by 2% to 3% of the expected power output for every 1000 ft. above sea level. For this reason, you might consider a significant wattage reserve when purchasing a generator for the cold region.

Why Does Your Commercial Building Need A Generator?

Usually, the need for backup generators in a commercial building depends highly on the type of business in operation. However, installing a generator in your commercial building is essential for the following reasons.

Prevents loss

Loss is a broad term when it comes to commercial establishments. For example, restaurants suffer loss from spoiled food and beverage during a [power outage](#). Hospital risk losing lives if refrigerators and life-supporting machines are not powered. On the other hand, companies risk losing data when the power supply is interrupted.

Installing a backup generator in your commercial building is critical for running operations. An outage can cause an unimaginable loss regardless of how long it lasts.

Cost saving

In addition to causing various losses, a power outage can cause severe damage to electronics and electric appliances. Remember, a commercial building comprises numerous electricity-powered devices such as AC, computers, refrigerators, cell phones, etc. If not protected from power failures, a sudden power outage can result in malfunctioning or unrepairable damage to sensitive devices.

While most people opt for batteries for backup, installing a generator in a commercial building can prevent the need for device repairs or replacement resulting from power failures.

Ensures consistency in production

Every commercial establishment strives to achieve maximum productivity to increase its revenue. Most of them have hired a costly labor force to attain a certain level of productivity. A power outage can put all business operations to stand still in the current age where everything is digitalized.

In this case, a backup generator is the only option for preventing operational downtimes. Instead of having workers and machines idle due to emergency power outages, having an alternative power source is an excellent idea for maintaining a consistent workflow. An automated [backup generator](#) ensures that primary operations do not sense a power outage, let alone go to a standstill.

Conclusion

While the decision to install a backup generator in your commercial building might be costly, its rewards are worth every cent you spend. However, it would be best to consult a professional specialist if you find selecting the right generator size challenging. It helps prevent costly mistakes related to installing the wrong generator size.